

Product Collection	5th Gen Intel® Xeon® Scalable Processors
Code Name	Products formerly Emerald Rapids
Vertical Segment	Server
Processor Number ?	6542Y
Lithography ?	Intel 7
Recommended Customer Price ?	\$2878.00

CPU Specifications

Total Cores ?	24
Total Threads ?	48
Max Turbo Frequency ?	4.1 GHz
Processor Base Frequency ?	2.9 GHz
Cache ?	60 MB
Intel® UPI Speed	20 GT/s
Max # of UPI Links ?	3
TDP ?	250 W

Intel® Speed Select Technology - Performance Profile (Intel® SST-PP)

Config	Active Cores	Base Frequency	TDP	Description
6542Y (0)	24	2.9	250	
6542Y (1)	20	2.9	225	
6542Y (2)	16	3.0	205	

Supplemental Information

Marketing Status	Launched
Launch Date ?	Q4'23
Servicing Status ?	Baseline Servicing
Use Conditions ?	Server/Enterprise

Memory Specifications

Max Memory Size (dependent on memory type) ?	4 TB
Memory Types ?	Up to DDR5 5200 MT/s 1DPC
Max # of Memory Channels ?	8
ECC Memory Supported ¹ ?	Yes

Expansion Options

Scalability	2S
PCI Express Revision ?	5.0
Max # of PCI Express Lanes ?	80

Package Specifications

Sockets Supported ?	FCLGA4677
Package Carrier	E1B
DTS Max	101 °C
T _{CASE} ?	83
Package Size	77.5mm x 56.5mm

Intel® On Demand Available Upgrades

Activation Model	QAT	DLB	DSA	IAA	SGX512
SGX 512GB					512
Analytics Suite 1				1	
Intel® Virtual RAID on CPU (Intel® VROC) Activation Options ?		VROC RAID1 Only, VROC Standard, VROC Premium			

Advanced Technologies

Intel® On Demand Activation Model ?	Yes
Intel® Data Streaming Accelerator (DSA)	1 default devices
Intel® Volume Management Device (VMD) ?	Yes
Intel® Advanced Matrix Extensions (AMX)	Yes
Intel® Speed Select Technology – Core Power ?	Yes
Intel® Speed Select Technology – Turbo Frequency ?	Yes
Intel® Deep Learning Boost (Intel® DL Boost) on CPU ?	Yes
Intel® Speed Select Technology - Base Frequency ?	Yes
High Priority Cores	8
High Priority Core Frequency	3.1 GHz
Low Priority Cores	16
Low Priority Core Frequency	2.7 GHz
Intel® Resource Director Technology (Intel® RDT) ?	Yes
Intel® Speed Shift Technology ?	Yes
Intel® Turbo Boost Technology ¹ ?	2.0
Intel® Hyper-Threading Technology ¹ ?	Yes
Intel® Transactional Synchronization Extensions ?	Yes
Intel® 64 ¹ ?	Yes
Instruction Set Extensions ?	Intel® AMX, Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512
# of AVX-512 FMA Units ?	2

Security & Reliability

Intel® Trust Domain Extensions (Intel® TDX) ?	Yes
Intel® Software Guard Extensions (Intel® SGX) ?	Yes with Intel® SPS
Default Maximum Enclave Page Cache (EPC) Size for Intel® SGX	128 GB
Intel® Crypto Acceleration ?	Yes
Intel® QuickAssist Software Acceleration	Yes
Intel® Platform Firmware Resilience Support	Yes
Intel® Control-Flow Enforcement Technology ?	Yes
Intel® Total Memory Encryption - Multi Key	Yes
Intel® Total Memory Encryption ?	Yes
Intel® AES New Instructions ?	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology ¹ ?	Yes
Execute Disable Bit ¹ ?	Yes
Intel® Boot Guard ?	Yes
Intel® Run Sure Technology ?	Yes
Mode-based Execute Control (MBEC) ?	Yes
Intel® Virtualization Technology (VT-x) ¹ ?	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ¹ ?	Yes
Intel® VT-x with Extended Page Tables (EPT) ¹ ?	Yes